CLAIMS

What is claimed as the invention is:

- 1. A replication-conditional virus with a genome comprising adenovirus replication genes and at least one heterologous gene that replaces a function of the adenovirus E1a gene.
- 2. The virus of claim 1, which is a cytolytic virus.
- 3. The virus of claim 1, wherein the heterologous gene is selected from Y-box transactivators, the immediate early genes of cytomegalovirus (CMV), and the oncogenes of human papillomavirus (HPV).
- 4. The virus of claim 3, wherein the heterologous gene is YB-1.
- 5. The virus of claim 3, wherein the heterologous gene is CMV IE1 or CMV IE2.
- 6. The virus of claim 3, wherein the heterologous gene is HPV E6, or HPV E7.
- 7. The virus of claim 1, wherein the heterologous gene (or another gene required for replication or assembly of the virus) is under control of a tissue or tumor specific transcriptional control element.
- The virus of claim 7, wherein the transcriptional control element is a tissue specific promoter, which is a promoter for albumin, α-fetoprotein, prostate-specific antigen (PSA), mitochondrial creatine kinase (MCK), myelin basic protein (MB), glial fibrillary acidic protein (GFAP), or neuron-specific enolase (NSE).
- 9. The virus of claim 7, wherein the transcriptional control element is a tumor specific promoter, which is a promoter for telomerase reverse transcriptase (TERT), carcinoembryonic antigen (CEA), hypoxia-responsive element (HRE), *Grp78*, L-plastin, or hexokinase II.
- 10. The virus of claim 9, wherein the promoter comprises at least 25 consecutive nucleotides in SEQ. ID NO:1.
- 11. A host cell containing the virus of claim 1.
- 12. A method for selecting a virus according to claim 1, comprising transducing a host cell with a virus lacking an adenovirus gene required for replication or assembly, but comprising a heterologous gene; and determining whether replicated virus is produced by the cell

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- A method for killing a cancer cell/comprising contacting the cell with the virus of claim 7.
- 14. A method for killing a cell expressing telomerase reverse transcriptase (TERT), comprising contacting the cell with the virus of claim 10.
- 15. The method of claim 13, wherein the cancer is lung cancer, pancreatic cancer, medulloblastoma, cervical carcinoma, fib osarcoma, or osteosarcoma.

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